Illinois Environmental Protection Agency · 2200 Churchill Road, Springfield, IL 62706

Division File

217/782-6761

Refer to: 1191150006 -- Madison County
Wood River/Amoco-Riverfront
Wood River/Amoco-Main Plant
Subpart F, Groundwater Monitoring
Compliance Inquiry Letter

November 28, 1984

CERTIFIED # P731918656

Amoco Chemicals Corporation
Mail Code 1203
Post Office Box 182
Wood River, IL 62095

Attention: Mr. E. J. Sullivan
Environmental Consultant

Dear Mr. Sullivan:

The Agency has received your proposed groundwater monitoring program, dated October 31, 1984, for the upper (perched) water table at the Amoco Main Plant and Riverfront sites. After reviewing the program, the following deficiencies and comments must be addressed before the monitoring plan can be approved.

725.191(a)(1)(A)&(B). Based on water elevations encountered during drilling, this report infers a semi-radial flow pattern in the upper water table at both sites. Taking into consideration the vertical and lateral discontinuity of the clay layer causing perched conditions, we concur with the statement that determination of upgradient wells by Agency regulations is difficult in this situation. However, locating these upgradient wells between the impoundments and the downgradient wells as recommended by Amoco's Groundwater Management Section would merely detect the migration of hazardous waste constituents before they reached the downgradient wells. This is contrary to the intended purpose of an upgradient well, which is to provide samples of water quality entering the facility.

Section 725.191(a)(2). The number, locations and depths of the monitoring wells must ensure that they immediately detect any statistically significant amounts of hazardous waste constituents that migrate from the waste management area. To support well placement decisions the continuous boring logs and well diagrams must be submitted indicating the boring elevations and depths of the screened horizons.

Section 725.191(c). All monitoring wells must be constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents contamination of the samples and the groundwater. To satisfy this requirement a detailed diagram of the monitoring wells, to include types of materials used, must be submitted. It is the Agency's practice to continually evaluate its policies in accordance with the latest applications in this field. Recent studies have proven that monitoring wells constructed of polyvinylchloride (P.V.C.) piping do not yield samples representative of ambient groundwater quality for organic parameters. This finding has prompted the Agency to require all future wells intended for organic sampling to be constructed of Teflon or stainless steel (S.S. 316).

There is no information provided for well P-9S in the table of fluid level observations or on figures 1 and 3.

The Agency assumes the locations of wells RL-7S and RL-9s are as indicated in figure 1. Figure 3 indicates a different order.

Agency Recommendations:

The mounding effect caused by the impoundments makes it difficult to determine upgradient wells at this time. Monthly monitoring of water level elevations should be conducted until groundwater flow direction is determined. An evaluation of this data will be submitted monthly with a map of the inferred groundwater flow. These evaluations will be conducted until a determination can be made on the hydraulic gradient and flow direction. Once this determination is made a site map can be prepared indicating the hydraulic gradient and flow direction.

The final monitoring plan should include continuous boring logs and well construction diagrams for each well included in the program.

This monitoring program will be considered an addition to the existing program at the facility. Background analysis will be conducted for the first four quarters and additional sampling will be performed in accordance with Section 725.192. This will not require a separate sampling and analysis plan as required in Section 725.192. However, this understanding should be referenced in the text of the final monitoring program.

The missing well information should be submitted for P-9S.

The addition of 3 wells to the proposed monitoring program. The "new well" indicated on figure 7, well RL-11S, indicated on figure 1 and well RL-6S to be located on the north side of deep well RL-6. These wells will be constructed of stainless steel or Teflon with the exception of well RL-11S which is already in place. The following wells should also be included in the monthly water level evaluation with the sampled wells.

P-5S	RL-7S	RL-145
RP-3S	RL-9S	

All wells included in the monitoring program will be checked. Dry wells will be indicated as such on the evaluation.

A minimum of 3 slug tests will be performed in the riverfront area and 2 in the spray pond area to establish representative permeabilities in the perched zone.

Submit an updated map of Amoco's Main Plant and Riverfront site delineating the waste management boundary.

Submit the results of the dissolved hydrocarbon analysis indicating which well samples were tested, the method of testing and the findings.

You are requested to submit within fifteen (15) calendar days of receipt of this letter, a written response including a schedule of implementation. Your response should be directed to:

Illinois Environmental Protection Agency
Division of Land Pollution Control
2200 Churchill Road
Springfield, Illinois 62706

Attention: Mark A. Haney, Manager
Facilities Compliance Unit

If you have any questions please feel free to contact Dale Helmers of my staff at 217/782-6761.

Sincerely,

Mark A. Haney, Manager
Facilities Compliance Unit
Compliance Monitoring Section
Division of Land Pollution Control

MAH:KL:mkb:16/99

cc: Division File
Southern Region
Dale Helmers
Kenn Liss